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EXAMINER

BUI, VY Q

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 23

Application Number: 09/609,163
Filing Date: June 30, 2000
Appellant(s): FISCHHELL ET AL.

Paul A. Colletti
For Appellant

MAILED
AUG 12 2003
GROUP 3700

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/25/2002 and Applicant's response
filed 5/29/2003.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 50, 51, 52, 53, and 54 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

WO98/40035	HESS et al	9-1998
5,807,404	RICHTER	09-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 50, and 53-54 stand rejected under 35 U.S.C. 103(a) as being unpatentable over HESS et al-WO98/40035.

As to claim 50, HESS et al reference (Fig. 4 shown below) discloses a stent made of stainless steel (abstract, line 5).

The stent illustrated in Fig. 4 includes curved end struts 24 connected to associate curved end struts 24 by flexible links 40 or **so called wavy strip 40** by HESS (HESS, page 8, lines 10-27). The connecting point of each flexible link or **wavy strip 40** to a curved end strut is offset from the center point of the curved end strut 24. Referring to page 11, lines 10-13, Figs. 12a-b, and claim 2, HESS discloses that flexible links or **wavy strips** can have various configurations such as a sine wave shape as shown in Fig. 12a -b having one or more repeating portions 102. In view of these explicit teachings, at least it would have been obvious to one of ordinary skill in the art at the time the invention was made to **replace** flexible links or **wavy strips 40** illustrated in Fig. 4 with **wavy strips** of sine wave shape of two repeating portions 102 as

shown in the following Fig. 4B so as to make the stent (10) flexible and suitable for a more tortuous path in a vessel as disclosed by HESS (page 9, lines 1-13):

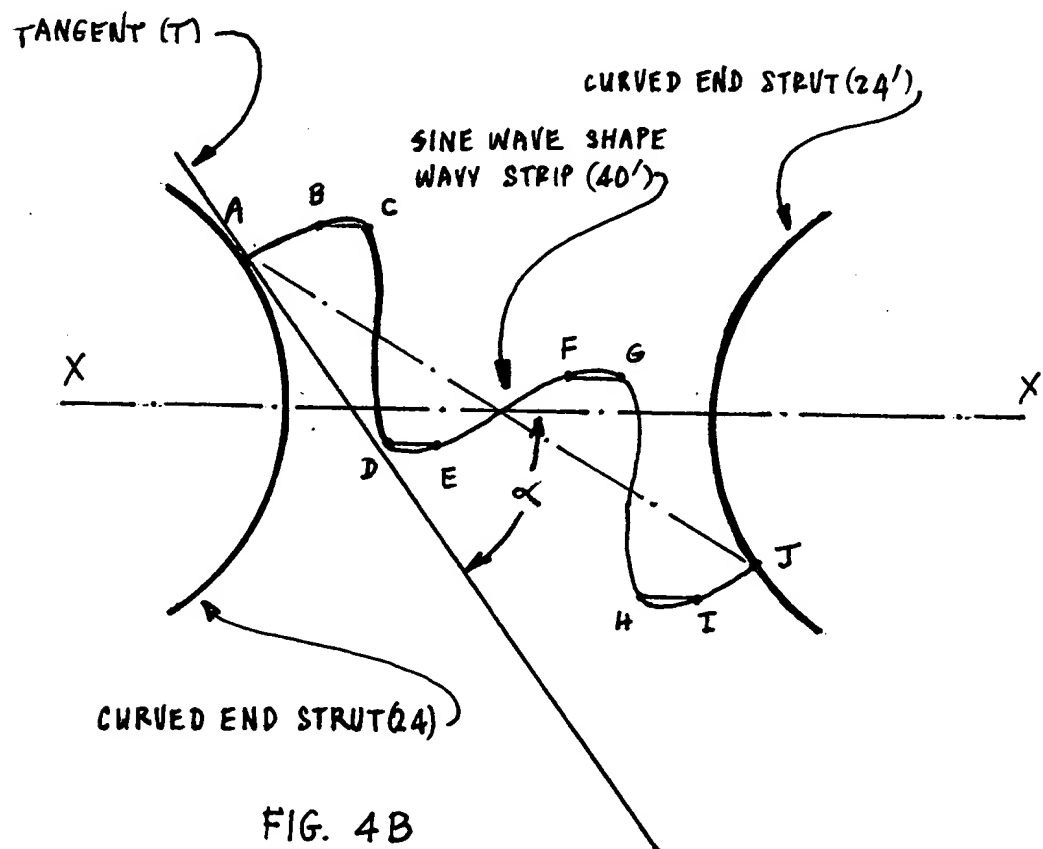
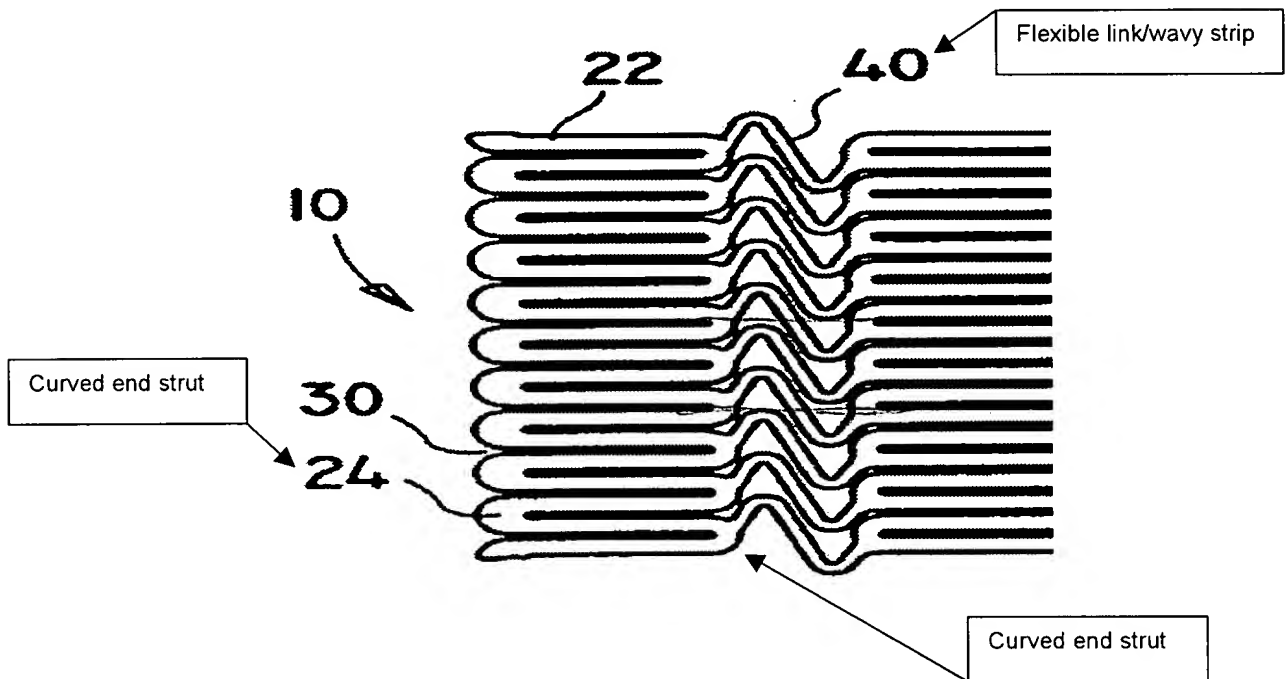


FIG. 4B

(CONSTRUCTED BY THE EXAMINER ACCORDING TO HESS TEACHING)

Referring to Fig. 4B constructed by the Examiner according to HESS teaching, claim 50 of the present invention is copied and interpreted as below:

A stent (10) as shown in Fig. 4/4B suggested by HESS in the form of a generally tubular structure having a longitudinal axis (XX), the stent (10) comprising;

a plurality of circumferential sets of strut members (22, 24) that extend in a generally circumferential, ring-like pattern around the stent's longitudinal axis (XX) with each circumferential set of strut members comprising a plurality of curved end struts (24), the curved end struts (24) being substantially curved across their entire length;

a plurality of flexible links/**wavy strips** (40') with each flexible link/**wavy strip** (40') being fixedly attached to two adjacent circumferential sets of strut members (22, 24) and each flexible link/**wavy strip** (40') having a proximal end (A) and a distal end (J) with a line (AJ) drawn through the proximal and distal ends of the flexible link/**wavy strip** (40') lying transverse to the stent's longitudinal axis (XX), each flexible link/**wavy strip** (40') having at least four generally longitudinal extending curved segments (BC, DE, FG, HI) that each have a proximal end (B or D or F or H) and a distal end (C or E or G or I) with a line (BC or DE or FG or HI) joining the proximal end and distal end of each curved segment being generally parallel to the stent's longitudinal axis (XX), the curved segments (BC, DE, FG, and HI) being connected together in series by three generally circumferentially extending segments (CD, EF, GH) of

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approximately equal length; and the stent (10) being further characterized by having the outermost curved segment (AB) of each flexible link/wavy strip (40') connected to each "curved end strut" (24)*⁷ at a point (A) thereon, the tangent (T) to the curved end strut (24) at which point (A) being at an acute angle (alpha) with respect to the stent's longitudinal axis (XX) as taken in the direction of the curved end strut (24', see above Fig.) that is opposite the curved end strut (24) onto which the outermost curved end segment (AB) is attached. *Note that in the claim, the wrong term "curved end segment" is used instead of the right term - curved end strut - as used in the above rejection.

As to claim 53, HESS (abstract, line 5) discloses stent 10 can be made of stainless steel, a well-known material for making stent.

As to claim 54, the embodiment taught by HESS and illustrated as Fig. 4B above shows flexible links/wavy strips (40') of "N" shape comparable to the "N" shape labeled as "44" in Fig. 7 of the present invention.

3. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over HESS et al-WO9840035 in view of RICHTER-5,807,404.

In regard to claim 51, each flexible link 40 of HESS appears to be thinner than each curved end struts 24. Should the Applicant contends that HESS et al does not clearly teach each flexible link/wavy strip 40 having a width less than a thickness of each curved end strut, attention is directed to the RICHTER-5,807,404 reference which

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discloses a stent (Fig. 1) with flexible links 8', 9' having width W1 about 40%-50% less than the width W2 of other flexible link 8, 9 (which are comparable to the width of curved end struts 11', Fig. 2, RICHTER) for more flexibility at the end of the stent. In view of RICHTER-'404, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the outer most flexible links/wavy strips 40 of HESS et al to have a width less than the width of each curved end strut 24 to enhance flexibility at each end of the HESS stent 10.

As to claim 52, the HESS et al reference differs from that claimed by not reciting the ratio of thickness to width of each flexible link 40 of HESS et al being greater than 1.0. However, the RICHTER reference discloses that one can change a section's flexibility of the stent by "decreasing or increasing the thickness or width of elements of one or more of the sections relative to other sections" (column 1, lines 40-46). Note that the phrase "decreasing the thickness or width" (underlined added) indicates that the width, but not the thickness may be decreased. According to RICHTER teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to decrease the width of each flexible link/wavy strip 40 of HESS et al so that the width of each flexible link/wavy strip 40 is less than the radial thickness of the flexible link/wavy strip 40. This would result in the ratio of thickness to width of each flexible link/wavy strip 40 being greater than 1.0.

(11) Response to Argument

1. Referring to the Applicants' arguments, page 4, lines 18-20 and page 5, lines 16-18), the Applicants asserted that substitution of a sine wave wavy strip 40' (shown in Fig. 4B above) suggested by HESS claim 2 to repeat (for example, two sine wave shown in Fig. 12a, HESS) for a wavy strip 40 (shown in Fig. 4, HESS) necessarily requires further modification of the wavy strip 40' so as the modified HESS stent (as shown in Fig. 4B above) would read on claim 50 as now recited.

On the contrary, a replacement of wavy strips 40 with wavy strips 40' as illustrated in Fig. 4B above does not require any further modification of wavy strips 40' (two repeating of sine wave 102) so as the stent shown in Fig. 4B reads on claim 50. As pointed out in the above rejection of claim 50, each and every limitation recited in claim 50 is met by the stent shown in Fig. 4B above.

2. Referring to the Applicants' argument, page 5, lines 5-10, the invention includes generally straight segments, which are parallel to the circumferential direction of the stent.

This feature is not in the claims.

3. Referring to the Applicants' argument, page 5, lines 15-21, the Applicants asserted that there is no explanation for use of a flexible link/wavy strip 40'.

The Examiner wishes to direct the Applicants' attention to lines 1-6, page 9, HESS reference. HESS explains using of wavy strips 40 for greater flexibility of the stent deployed in more tortuous path.

For the above reasons, it is believed that the rejections should be sustained.

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For the above reasons, it is believed that the rejections should be sustained.




Respectfully submitted,

Vy Q. Bui
July 29, 2003

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